

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination November 2018

B. Tech in Chemical Engineering, Semester VII

Roll No.....

COURSE CODE: CHE 702;

Time: 3 hours

Max. Marks: 80

COURSE TITLE: Process Utilities and Industrial
Safety

Instructions to students:

1. Do not write anything other than your roll number on question paper.
 2. Assume suitable data wherever required and mention it clearly.
 3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.
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Q.1A Objective type multiple choice questions (10 questions @ 1 mark)

10

- i. TLV is
 - a- threshold limit value
 - b- threshold linear value
 - c- threshold limited value
 - d- none
- ii. Saliva and urine are involve
 - a- biological monitoring
 - b- physical monitoring
 - c- Chemical monitoring
 - d- all of the above
- iii. Risk Assessment is
 - a- industrial process
 - b- industrial process to calculate risk for hazard
 - c- industrial technology
 - d- none
- iv. Chemical hazards in the workplace are often the most complex hazards to implement proper controls due to the multitude of variables that affect the situation.
 - a- True
 - b- False
- v. Most of the particle size exhaled from body
 - a- 1.0 - 2.5 micron
 - b- 0.1-0.01 micron
 - c- none
 - d- all of these
- vi. Desuperheaters is
 - a- heat transfer or industrial process purposes
 - b- a device that lowers the temperature of superheated steam
 - c- it can be used effectively for heating
 - d- all of the above
- vii. Bhopal tragedy associated with
 - a- MIC
 - b- Nuclear accident
 - c- Air pollution
 - d- Both a & c
- viii. Check list for Job Safety Analysis (JSA) consists of
 - a- Work area, material, machine, tools
 - b- Men, machine, material, tools
 - c- Men, machine, work area, tools
 - d- Men, work area. Material, tools
- ix. High severity with probability occurs in the event if it occurs
 - a- Risk
 - b- Hazard
 - c- accident
 - d- None of the above

x	Risk Assessment process in chemical industry is a- calculate the intensity of accidents b- industrial process to calculate risk for hazard c- Both a & b d- none	
Q.2	Short answer type questions (4 questions @ 2.5 marks)	10
i	Write a critical note on industrial hygiene for industry work place.	
ii	Discuss the classification of hazards chemical	
iii	Short note a safety valve	
iv	Short note on a boilers and their safety in industries	
Q.3A	Discuss the flow diagram of HAZOP method for hazardous material	05
Q.3B	What is class -1 explosive chemical. Give brief note on it.	05
Q.4A	Give the risk assessment flow diagram for JKL	05
Q.4B	Submit a critical analytical note on piper alpha tragedy? Briefly discussed.	05
Q.5A	Discuss the zeolite method for water purification.	05
Q.5B	Discuss the threshold value of toxic chemicals how this value explain the toxicity of chemicals	05
Q.6A	Discuss the important industrial safety regulations for industries.	05
Q.6B	Short note on desuperheaters and give their importance in industry	05
	OR	
Q.6B	Give note on safety in the storage of hazardous chemicals	05
Q.7	Define the HAZOP, concept and their guideline for using procedure with suitable example.	10
Q.8	A continuous process for production of Diammonium Phosphate give HAZOP method for DAP production.	10
	OR	
Q.8	Short note on a- Air compressors b- vacuum pumps	10